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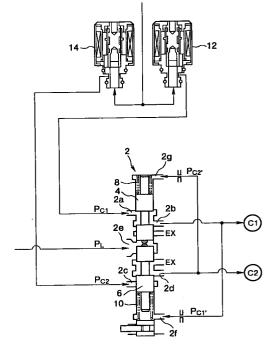
· Abe, Akiharu Toyota-shi, Aichi-ken (JP) (51) Int. Cl.⁶: **F16H 61/12** // F16H61:02

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(54)Hydraulic control system for automatic transmission of multiple clutch type

(57)A hydraulic control system for an automatic transmission of multiple clutch type, in which a switchover valve (2 in Fig. 4) for switching-over clutch control pressures includes two spool valvules (4 and 6). When one of two clutches (C1 and C2) is supplied with the clutch control pressure and is held in engagement, the spool valvules (4 and 6) operate to cut off the supply of the clutch control pressure for the other clutch to-be-disengaged and to hold the engagement of one clutch tobe-engaged. Thus, even when the supply source (12 or 14) of the clutch control pressure has failed, the clutches (C1 and C2) are prevented from coming into multiple engagement.

FIG.4





EUROPEAN SEARCH REPORT

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	DOCUMENTS CONSID	ERED TO BE RELE	VANT	·-	
Category		dication, where appropriate,		Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.6)
X	PATENT ABSTRACTS OF vol. 007, no. 031 (& JP 57 184730 A (November 1982, * abstract * * figures 1,6 *	M-192), 8 Februar		1-3	F16H61/12 //F16H61:02
Α	US 5 433 124 A (PER * abstract * * column 2, line 15 * column 4, line 1 * column 5, line 10 * figures 1,2 *	- line 21 * - line 23 *		1-3	
Α	US 4 492 251 A (BLA * the whole documen			1-3	
A	US 4 729 408 A (COU * abstract * * column 1, line 36 * column 2, line 47 * column 5, line 34 * figures 1-3,7 *	- column 2, line - column 4, line	28 *	1,2	TECHNICAL FIELDS SEARCHED (Int.Cl.6) F16H F16D
P,A	EP 0 713 987 A (TOY * abstract * * column 1, line 36 * figures 1-3,7 *	·		1,2	
	The present search report has t				
	Place of search	Date of completion of		0-1	Examiner
X : part Y : part docu A : tech O : non	THE HAGUE ATEGORY OF CITED DOCUMENTS icularly relevant if taken alone icularly relevant if combined with another ment of the same category inological background written disclosure mediate document	E : earli after D : doci L : doci & : men	ry or principle er patent docu the filing date ument cited in ment cited for	underlying the i iment, but publi the application other reasons	